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EXAMINER

METZMAIER, DANIEL S

ART UNIT PAPER NUMBER

1712

DATE MAILED: 07/03/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/809,529

Applicant(s)

SPALDING, WILLIAM A.

Examiner

Daniel S. Metzmaier

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 29 May 2001 & 3 May 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-91 is/are pending in the application.
- 4a) Of the above claim(s) 78-81 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-77 and 82-91 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) ☐ Other: _____

DETAILED ACTION

Claims 1-91 are pending. Claims 82-91 were added by the amendment and election filed May 3, 2002, Paper No. 7. Claims 78-81 have been withdrawn as directed to a non-elected invention.

Election/Restrictions

1. Applicant's election of group I, and the species of formulation I, in Paper No. 7 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Claims 77-81 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group I, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 7.

Applicants note the new claims correspond to the elected species that and claims 63 and 64. Applicants request the examiner consider the remaining species of the genus if allowance is determined for the elected species.

Information Disclosure Statement

2. The information disclosure statement filed May 29, 2001 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each U.S. and foreign patent; each publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

The IDS fails provide a copy of Reference BH which is WO 00/09856. Applicants do provide an abstract of said WO 00/09856 from an internet database. Said reference should be cited as other disclosures since it is not a foreign patent document. Please see MPEP 707.05(e).

Double Patenting

3. Claims 1-76 and 82-91 are objected to under 37 CFR 1.75 as containing numerous occurrences of substantial duplicate claims too numerous to detail. Specific examples include claims 3 as being a substantial duplicate of 4; claims 7 and 8; claim 10, which is dependent on claim 2, and claim 9. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Applicants are required to review the numerous claims to remove each occurrence of duplicate claims that exist.

Claim interpretation

4. The claims are directed to compositions comprising: (a) a demulsifier, (b) a first solubilizing surfactant, and (c) a second solubilizing mutual organic surfactant. Each of the components has functionally defined concentrations at least in the independent claims. The "said aqueous solution" is an aqueous solution of the emulsion or added to the emulsion but is not required by any of the claims. The dependent claims which limit the aqueous solution to brine further limit the functionally defined concentrations.

The "mutual solvent effective to solubilize said demulsifier and said solubilizing surfactant to produce a said composition" is interpreted as a mutual solvent for each of "said demulsifier and said solubilizing surfactant".

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-14, 17, 21, 24, 27, 31-34, 37-39, 41, 44, 47-49, 55, 57-58, 65-74 and 77 are rejected under 35 U.S.C. 102(b) as being anticipated by Vlasblom, US 5,863,881. Vlasblom (example and claims) discloses compositions that comprise a 2 to 95 weight percent, preferably 10 to 20 weight percent of a salt of an alkyl aromatic sulfonate (isopropylamine¹ salt of linear dodecylbenzene sulfonate); a branched alcohol ethoxylate in an amount of 0.1 to 75, preferably 1-8 weight percent of said branched alcohol ethoxylate; a ethoxylated alkyl mercaptan in an amount of 0.1 to 75 weight percent, preferably 1 to 7 weight percent of said ethoxylated alkyl mercaptan; dipropylene glycol mono n-butyl ether as a mutual organic solvent in an amount of 1 to 94 weight percent, preferably 5-12 weight percent; and up to 95 weight percent of water.

Please note in claim 14, the "first solubilizing quantity of nonionic surfactant" reads on both the nonionic surfactant and a "second solubilizing quantity of a mutual organic solvent. Said nonionic surfactant is defined by a chemical structure

¹ Isopropylamine is synonymous with 2-propanamine.

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$R^6O(CH_2CHR^7O)_xR^8$. The claim defines R^6 as hydrogen or alkyl groups having 1 to 22 carbon atoms and R^8 as hydrogen or an alkyl groups having from about 1 to 6 carbon atoms. When R^6 is hydrogen or butyl, R^7 is methyl, x is 2, and R^8 is butyl or hydrogen; the structure defines dipropylene glycol-n-butyl ether.

The Vlasblom reference lacks a specific description of the alkyl group of the degree of ethoxylation of the branch alcohol ethoxylates TEKSTIM® 8741 or the use of ethylene glycol alkyl ethers. Therefore, claims defining the narrower range of HLB, the alcohol ethoxylate as linear, the alcohol ethoxylate having defined carbon numbers/degree of ethoxylation, or the solvent as ethylene glycol alkyl ethers have not been included in this rejection.

Claims 5-8 and 31-33 are included in this rejection because the brine is not a part of the claimed composition and merely defines the concentration of the components. Since the composition is otherwise anticipated, claims 5-8 and 31-33 are also anticipated. The claims employ the transitional language "comprising", which does not exclude the further ingredients of the Vlasblom reference. Furthermore, since the Vlasblom reference teaches the cleaning compositions further break (column 4, lines 22-45), said limitations regarding the demulsifying limitations are anticipated and would have been expected by those skilled in the art.

7. Claims 1-8, 65 and 66 are rejected under 35 U.S.C. 102(b) as being anticipated by Juprasert et al., US 5,942,469. Juprasert et al (claims, columns 6 to 8, column 11, line 59 to column 12, line 6; and examples) discloses compositions comprising a defoaming agent, a demulsifying agent and stabilizing agents. The demulsifiers may be

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anionic and/or nonionic and the stabilizers include glycols. The compositions are added to oil-brine-gas systems to defoam and break the emulsions. The functional language is implicit to formulating a composition effective to defoam and de-emulsify as disclosed.

Juprasert et al (column 4, lines 38-53) discloses the demulsifying agent comprises (1) 1 to 3 surface active agents

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 15-16, 18-20, 22-23, 25-26, 28-30, 35-36, 40, 42-43, 45-46, 50-54, 56, 59-64, 75-76 and 82-91 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vlasblom, US 5,863,881, in view of TEKSTIM® 8741 Technical Data Sheet, Tomah, Products, Inc; and Klier et al, 5,597,792, and Mehta et al, US 5,389,156. Vlasblom discloses compositions as set forth in the above rejection. Vlasblom (column 4, lines 22-45) teaches the self demulsification of the residues after cleaning.

Vlasblom differs from the claims in the particular nonionic surfactant employed and the particular co-solvent employed in the cleaning composition.

TEKSTIM® 8741 Technical Data Sheet discloses the molecular weight of 460 for said materials and they are characterized as a self demulsifying nonionic surfactant. A molecular weight of 460 correspond to the following approximate degree of ethoxylation

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based on a alcohol carbon number of C10 would be about 7, C12 would be about 6.5, C14 would be about 6, and C16 would be about 5.

Klier et al is cited on the face of the Vlasblom reference as prior art. Klier et al is directed to microemulsion cleaning compositions related to those disclosed in the Vlasblom reference. Klier et al (column 3, line 58 to column 4, line 9; and column 4, line 57 to column 5, line 16) discloses co-solvents. Klier et al (column 6, lines 62 et seq) discloses nonionic surfactants employed in the cleaning formulations including primary and secondary alcohol ethoxylates having from 9 to 24 carbon atoms in the alcohol and 1 to 9 ethoxy units. Preferred alcohol ethoxylates are secondary alcohol ethoxylates, which are also considered α -branched alcohol ethoxylates.

Mehta et al is also cited on the face of the Vlasblom reference as prior art. Mehta et al is directed to compositions for decontaminating hydrocarbon process equipment such as those handling crude oil (column 1). Mehta et al (column 6, lines 3 et seq) teaches cleaning, draining and breaking emulsions.

Mehta et al (column 8, lines 5 et seq) discusses surfactant selection as within the level of one skilled in the art. Mehta et al characterizes (column 8, lines 29 et seq) the nonionic surfactants as having an HLB with the range of 7.5 to 12 and (lines 47 et seq) include a combination of an ethoxylated nonionic surfactants and an alkylbenzene sulfonic acid. Mehta et al (column 10) teaches mixtures A and B that form microemulsions and employ butyl Cellosolve® (otherwise known as EGMBE) as a conventional solvent.

These references are combinable because they teach cleaning compositions employing terpenes, demulsifying their residues, and the Klier et al and Mehta et al references are cited as prior art in the Vlasblom reference. It would have been obvious to one of ordinary skill in the art at the time of applicants invention to employ conventional nonionic ethoxylated surfactants taught in the Klier et al reference in the Vlasblom compositions as part or all of the branched alcohol ethoxylates. Their use as an obvious functional equivalent would have been obvious in view of the clear statement in the prior art regarding the selection of suitable surfactants, the related structures, and the HLB properties disclosed in the Mehta et al reference.

Furthermore, it would have been obvious to one of ordinary skill in the art at the time of applicants invention to employ conventional solvents such as EGMBE (butyl Cellosolve®) for the related propylene glycol alkyl ethers.

10. Claims 9-64, 67-77 and 82-91 are rejected under 35 U.S.C. 103(a) as being unpatentable over Juprasert et al., US 5,942,469, in view of Mokadam, US 5,797,456. Juprasert et al (claims, columns 6 to 8, column 11, line 59 to column 12, line 6; and examples) discloses compositions comprising a defoaming agent, a demulsifying agent and stabilizing agents. The demulsifiers may be anionic and/or nonionic and the stabilizers include glycols. The compositions are added to oil-brine-gas systems to defoam and break the emulsions.

Juprasert et al differs from the claims in an explicit disclosure of the claimed demulsifiers, the particular combinations of agents and the concentrations set forth in dependent claims.

Juprasert et al (column 2, lines 22 et seq and claims) discloses compositions comprising a defoaming agent, a demulsifying agent and a stabilizing agent to stabilize the concentrate as an emulsion. Juprasert et al (column 4, lines 16-28) discloses:

"the wellbore treatment concentrate is an aqueous mixture comprising (1) about 1 to about 20%, more preferably about 0.5 to about 5%, and most preferably about 0.5 to about 2% of said defoaming agent, (2) about 1 to about 10%, more preferably about 2 to about 8%, and most preferably about 3 to about 6% of said demulsifying agent, (3) about 1 to about 15%, more preferably about 5 to about 14%, and most preferably about 8 to about 12%, of said emulsifying agent, when present and, (4) up to about 20%, more preferably about 0.1% to about 15%, and most preferably about 1 to about 15% of said stabilizing agent, when present. All percentages herein are on a weight basis unless noted otherwise."

Juprasert et al (column 4, lines 38-53) discloses:

"(1) the demulsifying agent comprises one or more (preferably 1 to 3) first surface active agents wherein each first surface active agent independently comprises from about 0.5 to about 10%, more preferably about 1 to about 5%, and most preferably about 1 to about 3% of the concentrate, (2) the emulsifying agent, when present, comprises one or more (preferably 2 to 3) second surface active agents wherein each second surface active agent independently comprises from about 0.5 to about 12%, more preferably about 5 to about 12%, and most preferably about 8 to about 12% of the concentrate, and (3) the stabilizing agent, when present, comprises one or more (preferably 1 to 3) stabilizers wherein each stabilizer independently comprises from about 0.1 to about 16%, more preferably about 0.5 to about 16%, and most preferably about 1 to about 15% of the concentrate."

Juprasert et al (column 7, lines 50 et seq) discloses emulsifying agents including ethoxylated alcohols column 7, line 56). Juprasert et al (column 4, lines 38-53) discloses the emulsifying combination preferably is a combination of different HLB emulsifiers having HLB values centers around 10 and 12. The HLB value of the combination is art known to be the sum of the partial HLB values, eg., (50% *HLB 9 + 50% HLB 13 = HLB 11). Juprasert et al (column 6, line 1 to column 7, line 50)

discloses demulsifying surfactants including alkyl benzene sulfonates (column 7, lines 47). Juprasert et al (column 8, lines 24 et seq) discloses stabilizers that include glycols and polyglycol ethers. Said stabilizers read on mutual solvents. Juprasert et al (column 11, line 59 to column 12, line 6) discloses the concentrates may be used by itself or combined with solvent pretreatment employing solvents including glycols and glycol ethers. Said glycol ethers read on the instant mutual solvents.

Mokadam (abstract and column 4, lines 47 et seq) discloses antisludge and demulsifying compositions. Mokadam (column 1, lines 27 et seq) characterizes the formation of sludge as a results of emulsion formation associated with high viscosity. Mokadam (column 4, lines 47 et seq) discloses a commercial antisludge composition comprising water based dodecyl benzene sulfonic acid, nonionic surfactant, alcohol and dispersant.

These references are combinable because they teach oil well treatment compositions. It would have been obvious to one of ordinary skilled in the art at the time of applicants invention to employ a dodecyl benzene sulfonate, nonionic surfactant and a glycolether solvent as an obvious combination closely related to the conventional commercial products employed as antisludge compositions with demulsification properties as disclosed in the Mokadam reference. The use of the particular isopropylamine dodecyl benzene sulfonate is an obvious commercially available dodecyl benzene sulfonate salt.

Variation of the concentration would have been obvious to one of ordinary skilled in the art at the time of applicants' invention in view of the Juprasert et al disclosed

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concentrations and the use of the disclosed concentrates with solvent pre-treatments clearly disclosed in the Juprasert et al reference.

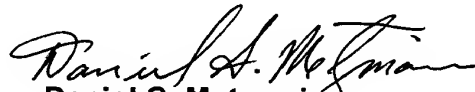
Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (703) 308-0451. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Dawson can be reached on (703) 308-2340. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.


Daniel S. Metzmaier
Primary Examiner
Art Unit 1712

DSM
July 1, 2002